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THE PLANT DISEASE SURVEY

Vol. IX September 15, 1925 Number 7

BACTERIAL WILT AND ROOTROT OF ALFALFA IN NEBRASKA

R. W. Goss of the Nebraska Experiment Station reports as follows on August 1 concerning this newly described bacterial disease. (Phytopath. 15: 243-244. 1925)

> "Occurring chiefly in western Nebraska, particularly in irrigated fields in Scotts Bluff County. Appears most severe on three year old plants. A large number of fields infected showing damage varying from a few spots a few feet in area up to 70% of the field. Has been confused with winter killing in many instances."

CONTROL OF POWDERY MILDEW OF RED CLOVER WITH SULFUR DUST IN OREGON

> "The attack of powdery mildew (Erysiphe polygoni) on red clover in Oregon this season is probably just as severe and general as last year if not more so. Fields are white. H. B. Howell, County Agent, Grants Pass, reports excellent control from broadcasting sulfur dust once for each cutting. L. R. Breithaupt, County Agent, Ontario, Oregon writes that he has secured splendid control with both sulfur dust applied at the rate of 10 to 25 pounds per acre and also with ordinary lime sulfur solution used at a dilution of one and one-half gallons to the hundred. Applications in either case must be repeated at least monthly to keep up good control." (Barss, Aug. 15)

BROWN SPOT OF CORN (PHYSODERMA ZEAE-MAYDIS)

On August 11 traces of Physoderma on field corn were noted at the Arlington Farm in Virginia by W. H. Tisdale.

Under date of September 1, O. C. Boyd reported that it was less serious in South Georgia than in 1924. A few individual fields showed severe loss of leaves due to dying and rotting at base. The late fields showed heaviest infection.

CORN SMUT (USTILAGO ZEAE)

Maine: Rare here; specimen sent in for name. (Folsom, Aug. 15)

Virginia: Somewhat less prevalent than in average season. (Fromme, Sept. 1)

South Carolina: Present. (Ludwig, Sept. 1)

South Georgia: Common throughout southern part of state, but not serious. First observed June 25, Brooks County. Most common in silks. (Boyd, Sept. 1)

Oklahoma: On old corn land as high as 40% of the plants are infected, however, it is not possible to give the exact loss due to the work of this parasite. (Rolfs, Aug. 1)

Ohio: Smut of sweet corn is less in evidence this year than is normally the case. (Thomas, Sept. 1)

Michigan: Apparently not so abundant as last year. Generally present in all fields but losses less than usual. (Dept. Bot., Sept. 1)

South Dakota: Slight traces everywhere. (Evans, Aug. 15)

New Mexico: Common. (Crawford, Sept. 1)

FLAX RUST IN OREGON

The first report of the occurrence of Melampsora lini on flax in the State of Oregon was received recently by the Plant Disease Survey when a specimen from Marion County, Oregon was submitted to the Bureau of Plant Industry by H. P. Barss.

FUSARIUM WILT OF COWPEA (FUSARIUM VASINFECTUM)

Oklahoma: More or less plentiful in various sections of the state.

Especially in the the older fields in southeastern Oklahoma. (Rolfs, Aug. 1)

APPLE SCAB (VENTURIA INAEQUALIS)

Maine: Abundant and severe in some places. Great variation, apparently due to variety, location, control measures, and (in McIntosh variety) amount of twig infection. About August 12, comparisons found as follows:

Unsprayed Ben Davis plot on Experiment Station Farm, 11% of leaves infected and 1% of fruits. (Excluding next)

Unsprayed, early-inoculated Ben Davis tree in preceding plot, 28% of leaves infected and 20% of fruits.

Nearby commercial Ben Davis orchard, sprayed four times, no scab seen.

Nearby unsprayed and sprayed Ben Davis commercial orchards, up to 45% scab on fruits.

Experiment Station Farm young McIntosh, sprayed five times, trace on fruits. No twig infection on trees.

Nearby commercial McIntosh orchards, sprayed two times, up to 96% scab; sprayed five times, up to 85% scab. (Folsom, Sept. 1)

Virginia: Scab has not developed into a factor of any great importance. (Fromme, Sept. 1)

Oklahoma: Very few infected fruits observed this year while last year as high as 90% of the fruit of some varieties were infected. Leaf infections which were fairly abundant this spring have entirely disappeared. (Rolfs, Sept. 1)

Michigan: The dry weather has almost completely held scab in check. There is very little fruit infection on unsprayed trees. Considerable late leaf infection is now showing up. (Bennett, Sept. 1)

Nebraska: Scab is showing only occasional slight injury. No severe infections found on orchards visited on fruit tour. (Goss, Sept. 1)

New Mexico: Trace in eastern part of state. (Crawford, Sept. 1)

APPLE RUST (GYMNOSPORANGIUM JUNIPERI-VIRGINIANAE)

Massachusetts: Serious in a few localities but in general not a problem in Massachusetts. (Osmun and Davis, Aug. 1)

Oklahoma: Comparatively little damage caused by this organism during the present year, however, last season in some sections of the state it caused considerable injury. (Rolfs, July 1)

Michigan: Specimens of rust on both apple and cedar were received from the southern part of the state. (Bennett, Sept. 1)

Nebraska: Rust on leaves is common in many orchards but only a trace of infection occurring on fruits. (Goss, Sept. 1)

FIREBLIGHT OF APPLE (BACILLUS AMYLOVORUS)

Oklahoma: Twig infections abundant on the Jonathan and Ben Davis early this spring, but the progress of the organism has been comparatively slow. Leaf infections were abundant in June but since then have gradually disappeared without material damage. (Rolfs, Sept. 1)

Michigan: Blight is everywhere present and has caused a heavy loss. There appeared to be an unusually high percentage of cankers active in the spring. Blossom blight caused considerable damage and a large percentage of the twigs in many orchards have been killed. (Bennett, Sept. 1)

Nebraska: Twig blight was severe in a few orchards planted close to infected pear orchards. (Goss, Sept. 1)

New Mexico: Considerable damage to Jonathans; blighting of young shoots and blossoms. (Crawford, Sept. 1)

BLISTER CANKER OF APPLE (NUMMULARIA DISCRETA) IN OKLAHOMA AND NEBRASKA

Oklahoma: A very common parasite in many of the older orchards of the state. (Rolfs, July 1)

Nebraska: Common and serious on many old orchards and particularly on susceptible varieties such as Ben Davis. The young orchards are relatively free of this serious trouble. (Goss, Sept. 1)

APPLE MEASLES

A report of an investigation of a case of apple measles in West Virginia has recently been made by L. H. Leonian. Under date of September 1 we also have a report of apple measles from New Mexico by R. F. Crawford who states that it occurs all over the state where Jonathans are grown and is most severe on alkaline soils. Leonian who has worked in New Mexico and observed the so-called measles there, thinks that the two diseases are somewhat different. He writes as follows concerning the West Virginia occurrence.

"Measles were found in two orchards and were confined to young Stark Delicious trees. These were purchased from the same nursery about four or five years ago. The disease spreads very slowly, as in the last four years it advanced not more than one row of trees. Each infected tree forms a center of infection so that spots of measled trees were found throughout that part of the orchards where the Delicious trees were planted. Golden Delicious seems to be very resistant to the disease and no measles were found on any of this variety. Infected trees are stunted; the branches die back in severe cases and in the course of a few years the trees become so worthless that they are no longer retained in the orchard. There is no doubt that the disease progresses from year to year, yet the current year's growth failed to show any trace of this trouble. The manager of the orchard states that the symptoms do not appear during the growing season but they manifest themselves in the late fall and winter. Apparently severe pruning of infected wood checks the disease. Instances were observed where five years ago the infected wood was all cut off and since then nothing but healthy branches were produced. Where no pruning was done, every year's growth, except the current year's, was diseased."

APPLE BLOTCH, BITTER ROT, AND BLACKROT AS REPORTED FROM OKLAHOMA

F. M. Rolfs of the Oklahoma Experiment Station reports as follows concerning these three apple diseases:

"Blotch (Phyllosticta solitaria) is probably the worst disease of the fruit, affecting fully 60% of the fruit of Missouri Pippin and Ben Davis in unsprayed orchards."

"A few apples infected with bitter rot (Glomerella cingulata) were found in one orchard in eastern Oklahoma. It is quite probable that it will become more plentiful later in the season."

"Blackrot (Physalospora malorum) is destructive on all wormy fruit and especially destructive where the wind-fall fruit is exposed to the sun for a day or two."

APPLE BITTER PIT IN MICHIGAN

"Considerable bitter pit is making its appearance on Baldwin and Spy varieties. Some of the spots have been present since the fruit was half grown." (Bennett, Sept. 1)

OKLAHOMA AND MICHIGAN REPORT ON BROWNROT OF PEACH (SCLEROTINIA FRUCTICOLA)

Oklahoma: Comparatively little loss due to this organism during the present season. (Rolfs, Aug. 15)

Michigan: Fruit rot has not been severe but in a number of orchards the canker phase has caused considerable damage. In some cases 20% of the twig growth has been killed. (Bennett, Sept. 1)

CORYNEUM BLIGHT OF PEACH (CORYNEUM BEIJERINCKII)

Michigan: Fruit, leaf and twig infection present but not so severe as last season. Dry weather has held the disease in check. (Bennett, Sept. 1)

Washington: Occurs in some orchards in eastern Washington and in a few localities west of the Cascades. (Dept. Pl. Path., Sept. 1)

Oregon: The prolonged spring rains favored more spring activity of this fungus than usual. (Barss, July 1)

BACTERIAL SPOT OF PEACH (BACTERIUM PRUNI)

New York: Niagara County - Severe leaf infections of the bacterial leafspot disease has caused heavy loss of foliage in a few peach orchards. (Strickland, July 27)

South Carolina: Attack light this year in the northwest part of the state. One bad attack reported from Gramling. (Ludwig, Aug. 15)

Texas: Prevalent in young, neglected orchards. Loss about 1%. (Taubenhaus, Aug. 15)

Oklahoma: Not so plentiful as last year. Very little fruit injured by this organism during this season. Leaf infections more or less plentiful in most orchards. (Rolfs, Aug. 15)

Michigan: Present in many orchards but not nearly so destructive this year as last. (Bennett, Sept. 1)

FIREBLIGHT OF PEAR (BACILLUS AMYLOVORUS)

Delaware: First observed June 10. It has developed more rapidly and general distribution is greater than on apple. Slight increase over last year. (Adams, Aug. 1)

South Georgia: Vigorous blossom and shoot blight in spring. Only slow development after first week in April, due to drouth of April and May. Renewed activity beginning at June 10 in twig blight and canker formation. Fruit rot common now but not severe (5% loss). (Boyd, Aug. 1)

Oklahoma: Not so destructive as last year on the pear but quite plentiful on some varieties of apples. Leaf infections on pear abundant but the dry weather has apparently checked its progress. (Rolfs, Aug. 1)

Arkansas: Severe as usual. Pears are rarely raised commercially and only resistant types like Kieffer grown. (Young, Aug. 1)

Ohio: In the northern part of the state pear blight is exceptionally severe and destructive this year. Many trees are being killed outright with the disease. (H. C. Young, Aug. 15)

OKLAHOMA PLUM DISEASES

F. M. Rolfs reported under date of August 1 on plum troubles as follows:

Brownrot (Sclerotinia cinerea)

"Quite plentiful in eastern Oklahoma. Not so plentiful in western Oklahoma this year."

Bacterial spot (Bacterium pruni)

"The foliage and twigs of all the Japanese varieties more or less infected. The foliage injury not so marked as last season."

Rust (Puccinia pruni-spinosae)

"Common in the western part of the state."

Plum pockets (Exoascus pruni)

"Observed in two sections of the state during the present year. Very abundant on the sand plum. In some cases apparently killing the trees."

BLACKROT OF GRAPES (GUIGNARDIA BIDWELLII)

South Carolina: Unusually scarce this year owing to dry weather. Found fairly abundant on one unsprayed dooryard vine in the shade. (Ludwig, Sept. 1)

Oklahoma: This parasite is unusually destructive this season especially in the eastern part of the state where as high as 50% of the crop in some of the unsprayed orchards has been destroyed. (Rolfs, Sept. 1)

New Mexico: Less than last year. (Crawford, Aug. 15)

NOTES ON BLACK SPOT OF PLUM

By L. R. Hesler

"Early in August 1925, my attention was called to what seemed to be a certain instance of Bacterium pruni on plums. Specimens were brought from the

Station variety-orchard where about 77 varieties are being grown to determine commercial worth. The fruits showed unmistakable symptoms of the disease, the lesions varying in size from small lesions to large black spots perhaps 1.5-2 cm. in diameter. Cultures from the younger diseased areas yielded typical Bacterium pruni. Likewise, characteristic black spot lesions showed on leaves and twigs.

"On examination of the orchard it was observed that one variety in particular was heavily infected on leaves, twigs and fruits. This variety, known as 'Gee Whiz', evidently is highly susceptible. Other varieties were examined as to their relative susceptibility. The results of our estimates are set down in tabular form, special attention having been given to the relative amount of black spot on the ten or twelve best commercial varieties. Attention was also given to varieties which seemed heavily attacked, and to still others, taken at random, so that several Prunus species are represented in the tabulation.

"It seemed, in this orchard, that practically none of the best commercial Domestica plums was susceptible. One interesting exception is noted in the case of the Coates Improved French Prune which, while no disease showed on the fruit and only slight infection on leaves and twigs, was abundantly affected on fruit pedicels. The commercially important Damsons were also free of the disease. The Triflora plums, Shiro and Burbank, in general, were conspicuously infected as shown in the accompanying table. In other words, the only commercially valuable plums that showed high susceptibility were the two Trifloras just mentioned.

Among the less valuable varieties, again the Trifloras (such as Abundance and Satsuma) were heavily attacked. It was also noticeable that hybrids with Triflora 'blood' were much more susceptible than certain others. In general, it may be concluded, in this case only, that the Triflora, Americana, Munsoniana, Nigra, Hortulana and hybrid plums, (particularly of Triflora origin) are more liable to black spot than Domesticas and Institias."

Table 6. Observations on relative susceptibility of plum varieties, Ohio Agricultural Experiment Station Orchard, August 25, 1925.

I - Relative susceptibility of best commercial varieties			
Variety	Relative amount of infection		
	On leaves	On twigs	On fruits
Prunus domestica			
Reine Claude	0	0	0
Fellemberg	0	0	0
Yellow Egg	0	0	0
Standard Prune	0	0	0
*Coates Improved French Prune	S	S	0
Jefferson	0	0	0
Arctic	0	0	0
Prunus institia			
Shropshire Damson	0	0	0
French Damson	0	0	0
Prunus triflora			
Shiro	S	H	M
Burbank	H	H	S

Key to Table 6.
O - No infection
S - Slight infection
M - Moderate infection
H - Heavy infection
* - Heavy infection on fruit pedicels

II - Relative susceptibility of other less valuable varieties

Variety	Relative amount of infection		
	On Leaves	On Twigs	On Fruits
Prunus americana			
Terry	H	M	O
Wolf	H	M	O
Prunus domestica			
Lombard	O	O	O
General Hand	M	S	
Washington	M	S	O
Bradshaw	S	S	O
Gueii	O	O	O
Tragedy	S	O	O
Prunus Munsoniana			
Free Goose	H	O	
Late Goose	H	O	
Wild Goose	O	O	O
Prunus nigra			
Chaney	H	M	
Prunus (Hybrids)			
Victory	M	M	M
Maynard	H	M	O
Compass Cherry	H		
Hauska	H (defoliated)		
Prunus triflora			
Abundance	H	H	S
Satsuma	H		S
Prunus hortulana mineri			
Surprise	H		

LATE BLIGHT OF POTATO (PHYTOPHTHORA INFESTANS) REPORTED FROM MAINE AND WISCONSIN

Maine: August 29, E. L. Newdick, chief of seed certification work said blight effect on foliage was not as bad as in 1920. Since 1909 the worst blight year was 1917 and the next worst was 1920. Thus 1925 probably is about the third-worst blight year since 1909, taking the state as a whole with due weight to the heavy Aroostook County production.. (Folsom, Sept. 1)

Wisconsin: Reported by Prof. Milward in Portage County on August 22. Occurred in a field surrounded by woods in a pothole formation. (Vaughan, Aug. 25)

POTATO MOSAIC

Mississippi: Very prevalent. Many fields found this season showing 100% infection. Very few growers or seed dealers are using as yet, certified stock. (Neal, Aug. 1)

Oklahoma: Eight percent of the Bliss Triumph were more or less diseased. This trouble was most abundant on plants from home grown seed. (Rolfs, July 15)

Nebraska: Mosaic symptoms appeared late in July following a period of cool weather. Only one field listed for certification shows severe infection. On a recent tour of certified fields practically no curly dwarf was found, a slight amount of rugose mosaic and a larger percent of mild mosaic. Uncertified fields planted with poor seed show plenty of mosaic but the disease is not a major one in certified fields. (Goss, Aug. 1)

Washington: Virus diseases prevalent in about the same amount as usual or possibly less serious. (Dept. Pl. Path., Sept. 1)

Oregon: Rugose mosaic widespread and serious. Mild mosaic common, symptoms easily masked, damage perhaps not large under Oregon conditions. (Barss, Sept. 1)

POTATO DISEASES IN NEBRASKA

Reports on other potato diseases, in addition to that on mosaic, given above, have been received from R. W. Goss of the Nebraska Experiment Station.

Wilt and stem-end rot (Fusarium eumartii)

"Wilt showing earlier than last year and in larger amounts. Fields of Irish Cobbler from healthy seed in several instances show more wilt than Bliss Triumph on the same soil. Infection in these Cobblers appeared to be through the seed piece from the soil. Stem-end rot of new tubers is severe as plenty of soil moisture has prevented the plants from wilting completely."

Early blight (Alternaria solani)

"Early blight appears more prevalent than last year and is causing slight damage but it is as usual of minor importance in most commercial fields."

Rhizoctonia

"Rhizoctonia injury on stems causing a rosetting of the tops is unusually prevalent. These symptoms do not usually occur in the western part of the state except under irrigation. High soil moisture apparently favor this appearance of the disease. The corticium stage is abundant on many stems."

Spindle tuber

"Spindle tuber again appears as the major disease in most sections. Only a small amount appears in certified fields but many commercial fields planted with common stock which had not been rogued or selected show very high amounts of spindle tuber. Some seed introduced from other states show over 50% infection."

BLACKLEG OF POTATO (BACILLUS PHYTOPHTHORUS)

Oklahoma: Killing about 2% of plants in a field of Irish Cobblers; near Bixby. (Rolfs, July 15)

Ohio: Blackleg has not been so prevalent this season as last. Undoubtedly because of drier weather. (Telford, Aug. 1)

Minnesota: More abundant than usual on account of excessive rainfall. Worse in Red River Valley than elsewhere. Probably average of 5% loss to date in Red River Valley. (Sect. Pl. Path., Aug. 1)

Washington: A number of reports from both eastern and western Washington. (Dept. Pl. Path., Sept. 1)

Oregon: General and in some fields serious but losses will probably not exceed those in previous years. (Barss, Sept. 1)

TOMATO MOSAIC

New York: Some mosaic on tomatoes has been found in several commercial nurseries. (M. N. Taylor, Aug. 3)

Oklahoma: Causing considerable loss in the west central portion of the state. Fully 20% of the plants in a small field were killed by this disease. (Rolfs, Aug. 20)

Ohio: Mosaic has not been as serious this year as last, although it has caused some loss in some sections. (H.C. Young, Aug. 15)

Michigan: Less than last year. Only an occasional infected plant found. (Nelson, Aug. 15)

Nebraska: Mosaic very common, varying from a trace to 90% infection in commercial fields. This is the most serious disease of tomato vines in this state. (Goss)

New Mexico: Common wherever tomatoes are grown. (Crawford, Sept. 1)

BLOSSOM-END ROT OF TOMATO

Virginia: More general and severe than I have ever seen it, 50 to 60% of affected fruits not uncommon. Aside from this and Fusarium

wilt the tomato crop is exceptionally free from disease. (Fromme, Sept. 15)

Mississippi: Prevalent and serious everywhere this season because of dry weather. (Neal, July 15)

Arkansas: Common earlier in the season, especially in southern half of the state; apparently due to dry weather. (Young, Aug. 1)

Michigan: Drought conditions through June and July favorable to blossom-end rot. Rather common in some fields. (Nelson, Aug. 15)

New Mexico: Very severe on first fruit that set on. (Crawford, Sept. 1)

Washington: Reported from Prosser, Washington July 27. (Heald, Aug. 15)

Oregon: Very abundant this year due to excessively hot and dry atmospheric conditions prevailing early and later in the season. Oregon has enjoyed the longest continued absence of rain this summer on record but last year was drier through the spring. (Barss, Aug. 15)

TOBACCO MOSAIC

Virginia: Very prevalent in Amherst County, some fields showing 50 to 60% affected plants. (Fromme, Sept. 1)

BLACKFIRE OF TOBACCO (BACTERIUM ANGULATUM)

Virginia: Blackfire is becoming fairly prevalent especially in sections that have had fair rains and some crops have been harvested early to prevent further spread of the disease. As a rule infection is limited to occasional plants in low areas.
No wildfire seen in field. (Fromme, Sept. 1)

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